User's Manual

AMX-140FX/
AMX-140

14-CHANNEL MIXING CONSOLE/
with DIGITAL EFFECTS



www.altoproaudio.com
Version 1.4 Septemper 2005
— English —

SAFETY RELATED SYMBOLS



This symbol, wherever used, alerts you to the presence of un-insulated and dangerous voltages within the product enclosure. These are voltages that may be sufficient to constitute the risk of electric shock or death.

This symbol, wherever used, alerts you to important operating and maintenance instructions. Please read.

Protective Ground Terminal

AC mains (Alternating Current)

Hazardous Live Terminal

ON: Denotes the product is turned on.

OFF: Denotes the product is turned off.

WARNING

Describes precautions that should be observed to prevent the possibility of death or injury to the user.

CAUTION

Describes precautions that should be observed to prevent damage to the product.

Disposing of this product should not be placed in municipal waste and should be Separate collection.

WARNING

- **Power Supply**

  Ensure that the mains source voltage (AC outlet) matches the voltage rating of the product. Failure to do so could result in damage to the product and possibly the user.

  Unplug the product before electrical storms occur and when unused for long periods of time to reduce the risk of electric shock or fire.

- **External Connection**

  Always use proper ready-made insulated mains cabling (power cord). Failure to do so could result in shock/death or fire. If in doubt, seek advice from a registered electrician.

- **Do Not Remove Any Covers**

  Within the product are areas where high voltages may present. To reduce the risk of electric shock do not remove any covers unless the AC mains power cord is removed.

  Covers should be removed by qualified service personnel only.

  No user serviceable parts inside.

- **Fuse**

  To prevent fire and damage to the product, use only the recommended fuse type as indicated in this manual. Do not short-circuit the fuse holder. Before replacing the fuse, make sure that the product is OFF and disconnected from the AC outlet.

- **Protective Ground**

  Before turning the product ON, make sure that it is connected to Ground. This is to prevent the risk of electric shock.

  Never cut internal or external Ground wires. Likewise, never remove Ground wiring from the Protective Ground Terminal.

- **Operating Conditions**

  Always install in accordance with the manufacturer's instructions.

  To avoid the risk of electric shock and damage, do not subject this product to any liquid/rain or moisture. Do not use this product when in close proximity to water.

  Do not install this product near any direct heat source.

  Do not block areas of ventilation. Failure to do so could result in fire.

  Keep product away from naked flames.

IMPORTANT SAFETY INSTRUCTIONS

Read these instructions

Follow all instructions

Keep these instructions. Do not discard.

Heed all warnings.

Only use attachments/accessories specified by the manufacturer.

- **Power Cord and Plug**

  Do not tamper with the power cord or plug. These are designed for your safety.

  Do not remove Ground connections!

  If the plug does not fit your AC outlet seek advice from a qualified electrician.

  Protect the power cord and plug from any physical stress to avoid risk of electric shock.

  Do not place heavy objects on the power cord. This could cause electric shock or fire.

- **Cleaning**

  When required, either blow off dust from the product or use a dry cloth.

  Do not use any solvents such as Benzol or Alcohol. For safety, keep product clean and free from dust.

- **Servicing**

  Refer all servicing to qualified service personnel only.

  Do not perform any servicing other than those instructions contained within the User's Manual.

PREFACE

Dear Customer:

Thank you for choosing the ▲LTO AMX-140 14-Channel Mixing Console (AMX-140FX 14-Channel Mixing Console with Digital Effects), which is the result of our ▲LTO AUDIO TEAM's endeavours.

For the ▲LTO AUDIO TEAM, music and audio are more than a profession, it is a passion and an obsession!

We have, in fact, been designing professional audio products for a number of years in cooperation with many of the world's major brands.

The ▲LTO line represents unparalleled analogue and digital products made by musicians, for musicians. With our design centres in Italy, the Netherlands, and the United Kingdom we provide you with world-class designs, while our software development teams continue to develop an impressive range of audio specific algorithms.

By purchasing our ▲LTO products you become the most important member of our ▲LTO AUDIO TEAM. We would like to share with you our passion for what we design and invite you to make suggestions, which will aid us in developing future products for you. We guarantee you our commitment for quality, continual research and development, and of course the best prices.

The ▲LTO AMX-140(FX) mixing console is equipped with 4 mono input channels (these are provided with ultra low noise microphone pre-amplifiers and phantom power at +48 Volt), 4 stereo input channels, 4 stereo aux returns and 2 TK IN. So, in total you have 14 input channels on your AMX-140(FX). It is specifically designed for professional application. Seeing is believing, let's meet the ▲LTO AMX-140(FX).

We would like to thank all the people who made the ▲LTO AMX-140(FX) 14-Channel Mixing Console possible, especially to our designers and ▲LTO staff. It is their passion for music and professional audio that has made it possible for us to offer you, our most important team member, our continued support.

Thank you very much
▲LTO AUDIO TEAM

TABLE OF CONTENTS

1. INTRODUCTION

Thank you very much for expressing your confidence in ▲LTO products by purchasing ▲LTO AMX-140(FX) mixing console. The AMX-140(FX) is a professional compact mixer. You will get the smooth, accurate more natural and open sound from this apparatus, and it is really ideal for small gigs, recording and fixed PA installations.

The AMX-140(FX) mixing console is packed with some key features that can not be found in other consoles of its size: 4 mono (these are provided with ultra low noise microphone pre-amplifiers and phantom power at +48 Volt) and 4 stereo input channels, and each of them is provided with a 3 bands graphic equalizer for HI, MID and LOW controls; highly accurate 12-segment bar graph meters and 2-Track inputs assignable to main mix, control room / headphone outputs etc.. Besides, the 24 bit effects processor with 256 effects (16 presets × 16 variations) is equipped specifically for AMX-140FX.

Your AMX-140(FX) is very easy to operate but we advise you to go through each section of this manual carefully. In this way you will get the best out of your AMX-140(FX).

2. FEATURES

The AMX-140(FX) mixing console is designed for professional application. It will provide the following features:

The common features:

- 5 MIC input channels with gold plated XLRs and balanced LINE input
- 4 stereo input channels with balanced TRS jacks
- Ultra-low noise discrete MIC pre-amps with +48V Phantom power
- Extremely high headroom offering more dynamic range
- Balanced inputs for highest signal integrity
- Warm, natural 3-band EQ on each channel
- Switch-able Low-cut filter on each mono channel
- Peak LED on each channel
- AUX send 1/2 per channel for external effects and monitoring
- 4 AUX returns for additional functionality
- Control room and headphone outputs
- 2-Track inputs assignable to main mix, control room / headphone outputs
- Highly accurate 12-segment bar graph meters
- Inserts on MIC channels

Additionally, the AMX-140FX is also equipped with following features:

- 24 bit digital effects processor
- 256 effects (16 presets × 16 variations)
- Effect on/off by means of MUTE switch or a footswitch connected to the DFX FOOTSWITCH

3. READY TO START?

3.1 Please check the AC voltage available in your country before connecting your AMX-140(FX) to the AC socket.

3.2 Be sure that the main power switch is turned off before connecting the mixer to the AC socket. Also, you should make sure that all Input and output controls are turned down. This will avoid damages to your speakers and avoid excessive noise.

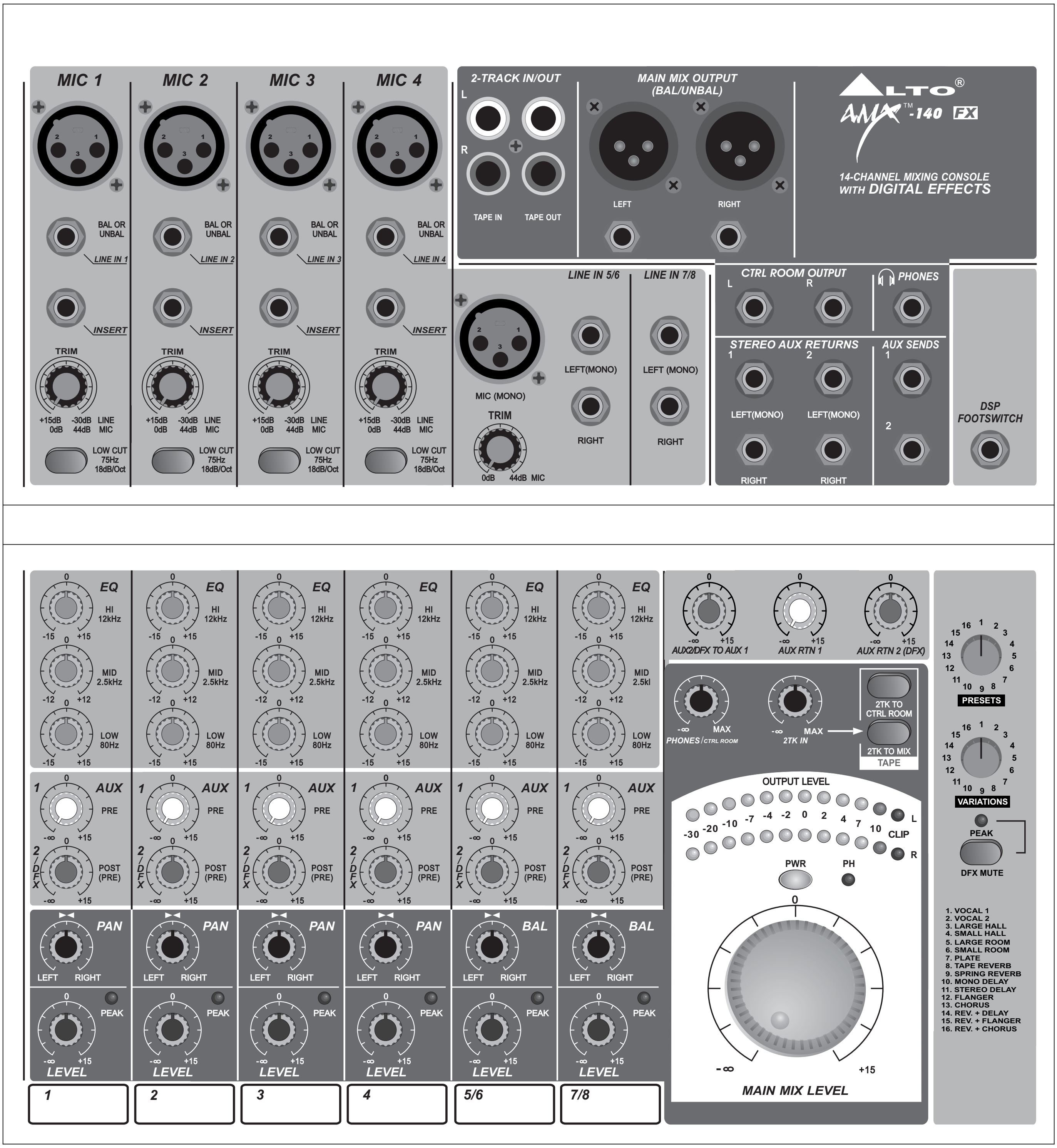
3.3 Before turning on the AMX-140(FX) you shall connect it to a power amplifier and turn-on the mixer BEFORE the power amplifier. Once you have finished your working session you shall turn the mixer off AFTER the power amplifier.

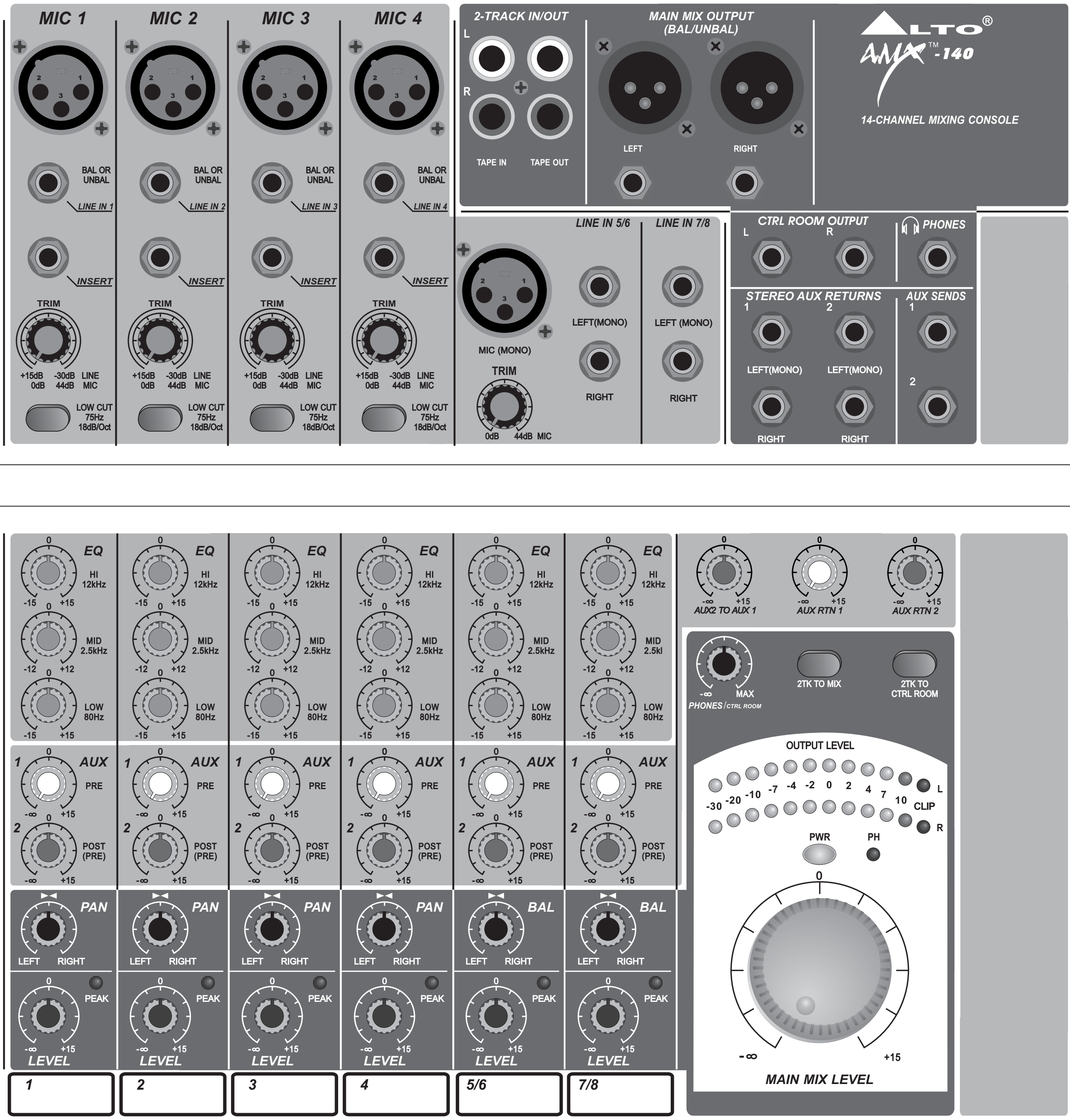
3.4 Before disconnecting the AMX-140(FX) always turn-off the power switch.

3.5 Do not use solvents to clean your AMX-140(FX). A dry and clean cloth will be OK.

4. CONTROL ELEMENTS

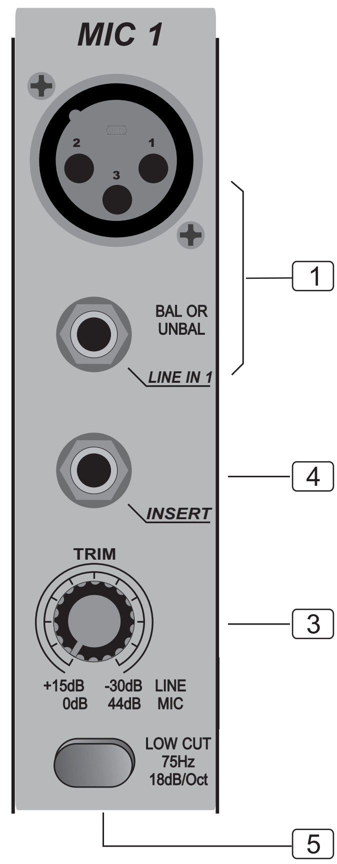
AMX-140FX




MIC 1
MIC 2
MIC 3
MIC 4
BAL OR UNBAL
LINE IN 1
LINE IN 2
LINE IN 3
LINE IN 4
INSERT
TRIM
+15dB 0dB
-30dB 44dB
LINE MIC
LOW CUT 75Hz 18dB/Oct
2-TRACK IN/OUT
L
R
TAPE IN
TAPE OUT
MAIN MIX OUTPUT (BAL/UNBAL)
LEFT
RIGHT
ALTO
AMX-140
14-CHANNEL MIXING CONSOLE
LINE IN 5/6
LINE IN 7/8
MIC (MONO)
LEFT(MONO)
LEFT (MONO)
RIGHT
0dB 44dB MIC
CTRL ROOM OUTPUT
PHONES
STEREO AUX RETURNS
AUX SENDS
EQ
HI 12kHz
MID 2.5kHz
LOW 80Hz
-15 0 +15
-12 0 +12
AUX
PRE
POST (PRE)
PAN
BAL
LEFT RIGHT
PEAK
LEVEL
1
2
3
4
5/6
7/8
AUX2 TO AUX 1
AUX RTN 1
AUX RTN 2
-∞ MAX
PHONES / CTRL ROOM
2TK TO MIX
2TK TO CTRL ROOM
OUTPUT LEVEL
-30 -20 -10 -7 -4 -2 0 2 4 7 10
CLIP
PWR
PH
MAIN MIX LEVEL

4.1 MONO MIC/LINE Channels 1

These are channel 1 through channel 4. You can connect balanced, low impedance microphones to the XLR socket. On the 1/4" phone jack you can connect either a microphone or a line level instrument. You shall never connect an unbalanced microphone to the XLR socket if you do not want to damage both the microphone and the mixer.



48 Volt phantom power 2

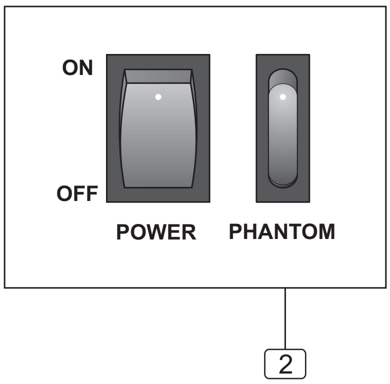
It is available only to the XLR Mic sockets. Never plug in a microphone when phantom power is already on. Before turning phantom power on, make sure that all faders are all the way down. In this way you will protect your stage monitors and main loudspeakers.

4.2 INPUT LEVEL Setting 3

This control is provided with 2 different indication rings: One is for the microphone and the other for the line levels. When you use a microphone you shall read the OUTSIDE ring (0~44 dB), when you use a line level instrument you shall read the INSIDE ring (+15~-30 dB). For optimum operation you shall set this control in a way that the peak LED will blink also occasionally in order to avoid distortion on the input channel.

4.3 MONO Channel INSERT 4

Insert points are provided for each mono MIC channel, which can allow you patch external signal processing devices into signal path. When you insert a TRS jack in the insert socket, the signal will be taken out after the input gain control (Trim), sent to an external processor such as a compressor-limiter, and returned into the channel strip immediately before the EQ section. Of course, the jacks used must be stereo (Tip Send/Ring Return).



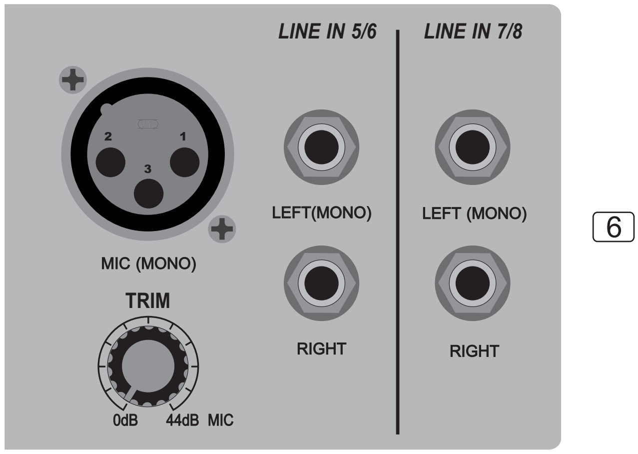
4.4 LOW CUT Switch 5

By pressing this button you will activate a 75 Hz low frequency filter with a slope of 18 dB per octave. You can use this facility to reduce the hum noise infected by the mains power supply, or the stage rumble while using a microphone.

4.5 STEREO Inputs 6

These are Channel 5 through 8. They are organised in stereo pair and provided with 1/4" TRS sockets.

If you connect only the left jack, the input will operate in mono mode.



4.6 3 BANDS EQUALIZER Controls

A 3-band equalizer is provided for all input channels with a wide range of frequency adjustment.

4.6.1 HI 7

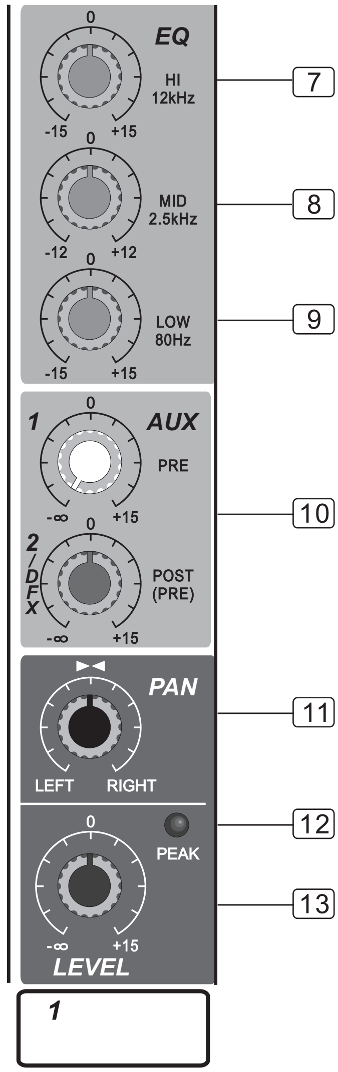
This is the Treble control. You can use it to get rid of high frequency noises or to boost the sound of cymbals or the high harmonics of the human voice. The gain range goes from -15dB to +15dB with a center frequency of 12 kHz.

4.6.2 MID 8

This is the Midrange control. It can affect most fundamental frequencies of all musical instruments and human voice. An attentive use of this control will give you any very wide panorama of sound effects. The gain range goes from -12dB to +12dB and the center frequency is 2.5 kHz.

4.6.3 LOW 9

This is the Bass control. Boost male voice or kickdrum and bass guitar. Your system will sound much bigger than what it is. The gain range goes from -15dB to +15dB and the center frequency is 80 Hz.



4.7 AUX SEND Controls 10

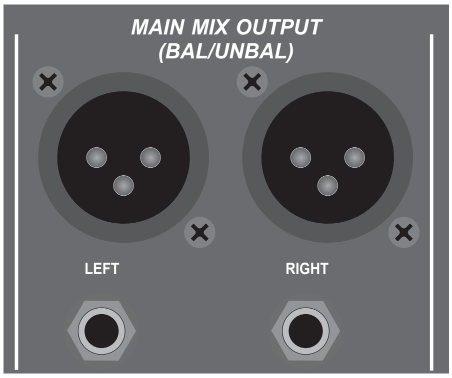
These two controls are used to adjust the level of the signal sent to AUX buses, and their adjustable range goes from - ∞ to +15dB.

AUX1 is configured as PRE-FADER, so, generally, it can be used for monitor application. While AUX2 is configured as POST-FADER, therefore, most of the times, it will be used for effects and processors input, however, you can also changed it to PRE-FADER configuration according to the specific application. (For more detail, please see chapter 6.)

4.25 MAIN MIX OUTPUT Connectors [34]

The stereo output is supplied both with XLR and 1/4" TRS sockets, which is used to send the audio signal to an amplifier.

Through the main mix level control, you can adjust the output level from -∞ to +15dB.



34

4.26 REAR PANEL Description



35 2 36

- POWER ON/OFF Switch [35]

This switch is used to turn the main power ON and OFF.

- PHANTOM ON/OFF Switch [2]

This switch will apply +48 Volt Phantom Power only to the 5 XLR microphone inputs. Never connect microphones when the phantom power is on already.

- AC INPUT Connector [36]

This connector is used to connect the supplied AC Adapter.

4.16 2TK IN Control 20

This control is used to adjust the level of 2TK IN signal, which can be varied from -∞ to MAX.

4.17 PHONES/CTRL ROOM Control 21

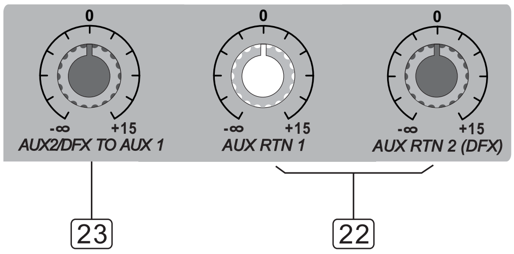
This control sets the amount of signal sent to the control room and headphone.

4.18 AUX RETURN Controls 22

As implied in the name, the auxiliary returns are used to 'return' the signal from the external effects or processors to the main mix, but, most of the times, it can also be worked as the additional stereo line inputs.

In this typical compact unit:
AUX RETURN1 is configured to be assigned to the main mix bus permanently, for mono application, only use the left input jack.
But for AUX RETURN2, excluding assigning the returned signal to main mix bus, it can also to AUX1 bus, and in this case, adjust AUX2/DFX TO AUX1 knob 23 to control the input level.

In AMX-140FX model, AUX RETURN2 (DFX) is connected rightly with the output of the internal digital effects, but, this signal flow will be broken, if you have any external signal inserted from these two jacks.



4.19 AUX SENDS Connectors 24

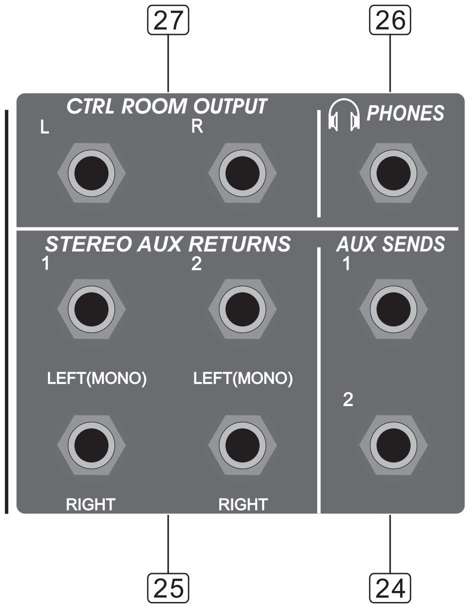
These 1/4" sockets are used to send out the signal from the AUX bus to external devices such effects.

4.20 STEREO AUX RETURNS Connectors 25

Use these stereo 1/4" sockets to return the sound of an effect unit to the main mix. You can also use them as the extra auxiliary inputs.

4.21 PHONES 26

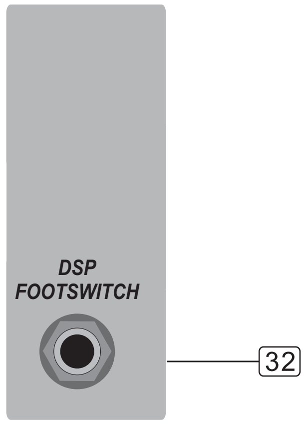
This socket will send out the mix signal to a pair of headphones.

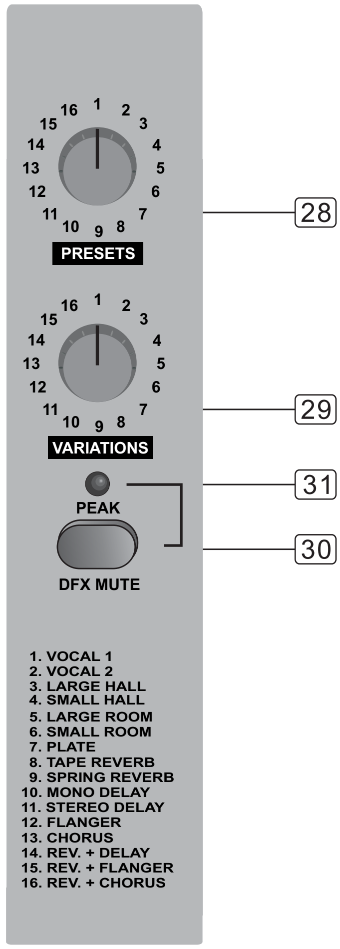


4.22 CTRL ROOM OUTPUT Connectors 27

These 1/4" sockets are used to send the control room signal to the studio monitor speakers or a second set of PA.

4.23 24 BIT DIGITAL EFFECTS (For AMX-140FX Model)





- PRESETS Control [28]

Adjust this knob to select the right effect you wish to perform. There are total 16 options for you: several kinds of reverb, mono and stereo delay, effects with modulation, and versatile two-effect combination.

- VARIATIONS Control [29]

Since you have selected the preferable effect, the next step, please go with the fine consideration, there are also total 16 variations for each preset. Each variation may be managed by several different factors.

- MUTE Switch [30]

This switch is used to activate/deactivate the effect facility. Sometimes, you can also use the DFX FOOTSWITCH for convenient operation.

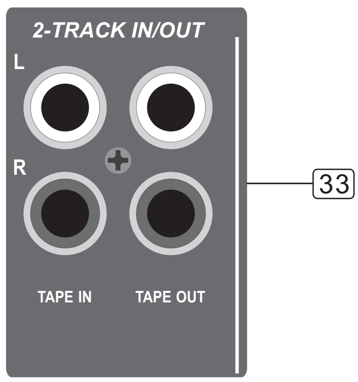
- PEAK LED [31]

This LED lights up when the input signal is too strong.
In case of the digital effect module being muted, this LED also lights up.

- DSP FOOTSWITCH [32]

This 1/4" phone jack can be used to connect an external footswitch to turn on/off the onboard effect module.

4.24 2TK IN/OUT Connectors [33]



- TAPE IN

Use the tape input if you wish to listen to your mix from a taper recorder or DAT. You can assign the signal coming from the taper recorder either to a pair of studio monitor using the control room assignment on the front panel or you can also send the signal directly to the main mix.

- TAPE OUT

These RCA jacks will route the main mix into a tape recorder.

In the AMX-140FX model, excluding sending out directly to the external effect or processor equipment, the AUX SEND2 will also be sent to the internal onboard effect module.

4.8 PAN/BAL Control [11]

Abbreviation of PANORAMA control for mono channels, for the stereo channels, always says, BALANCE control.

You can adjust the stereo image of the signal via this control. Keep this control in center position and your signal will be positioned in the middle of stage. Turn this control fully counterclockwise and the signal will be present only on the left speaker and vice-versa.

4.9 PEAK LED [12]

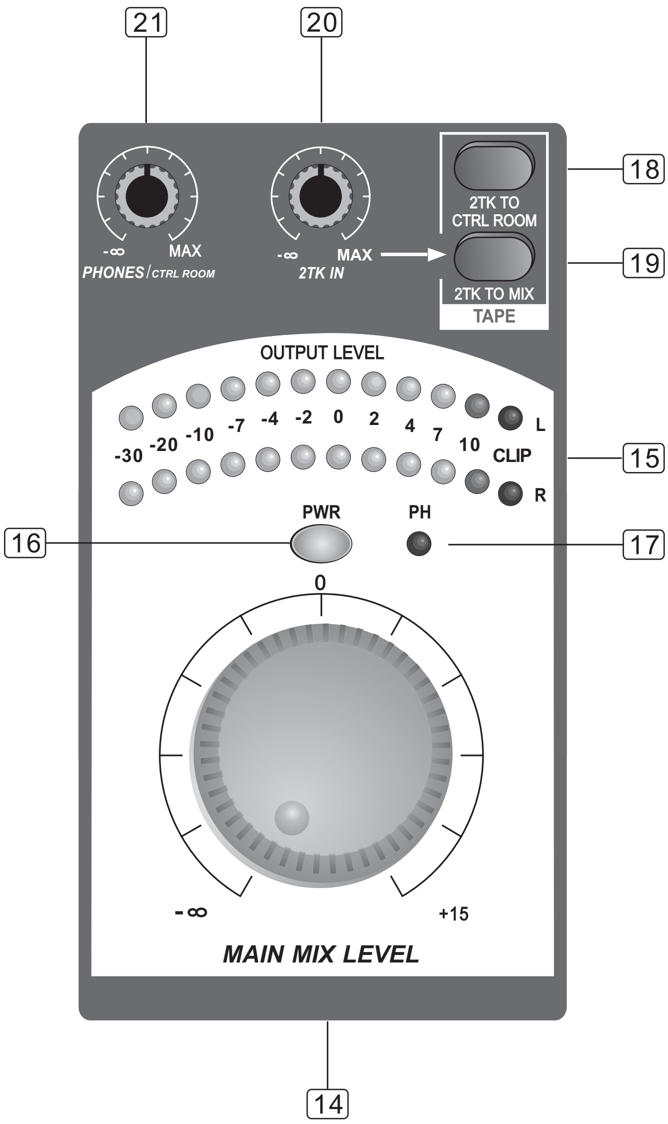
Inside your AMX-140(FX) the audio signal is monitored in several different stages and then sent to the PEAK LED. When this LED blinks, it warns you that you are reaching signal saturation and possible distortion. The PEAK LED will blink with a level that is 6dB before actual clipping.

4.10 LEVEL Control [13]

This control will adjust the overall level of this channel and set the amount of signal sent to the main output.

4.11 MAIN MIX LEVEL Dial [14]

This control sets the amount of signal sent either to the main out socket or to the tape output.



4.12 OUTPUT LEVEL LED Display [15]

This stereo 12 segments LED meter will indicate the level of the overall output signal.

4.13 POWER LED [16]

This LED indicates when the power is on in your AMX-140(FX).

4.14 PHANTOM LED [17]

This LED indicates when the phantom power is switched on.

4.15 TAPE Switches

- 2TK TO CTRL ROOM [18]

Engaging this button to route the 2 TRACK IN signal into the control room output.

- 2TK TO MIX [19]

Engaging this button to route the 2 TRACK IN signal into the main output.

5. INSTALLATION AND CONNECTION

Ok, you have got to this point you are now in the position to successfully operate your AMX-140(FX). However, we advise you to read carefully the following section to be the real master of your own mix. Not paying attention enough to the Input signal level, to the routing of the signal and the assignment of the signal will result in unwanted distortion, a corrupted signal or no sound at all. So you should follow this procedure for every single channel:

- Turn down all Input and output gain controls.
- Connect phantom powered microphones before switching on the +48Volt phantom power switch.
- If you have a power amplifier connected to your AMX-140(FX) set the level of the amplifier at no more than 75%.
- Now, set the CONTROL ROOM/PHONES level at no more than 50%. In this way you will be able to hear later what you are doing connecting a pair of headphones or a pair of powered studio monitor speakers.
- Position HI, MID and LOW EQ controls on the middle.
- Position panoramic (PAN) control on the center.
- With a headphone or studio monitor speakers connected apply a Line Level input signal so that the PEAK LED does not light up.
- At this point increase the input gain so that the PEAK LED will blink occasionally. In this way you will maintain good headroom and ideal dynamic range.
- Now connect a microphone and ask the singer to sing loud into the microphone. Turn slowly the Gain Control clockwise and have the PEAK LED blink only occasionally.
- Now repeat the same sequence for all input channels. The main LED Meter could move up into the red section. In this case you can adjust the overall output level through the MAIN MIX control.

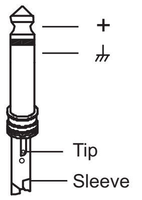
5.1 Audio Connection

Both XLR and 1/4 " TRS connectors are available on the unit. In this way you can interface the unit in several different ways without experiencing any noise or signal loss. You can use the unit with single instruments using The mixer's main insert or on "in-line" between a mixing console's output and a power amplifier.

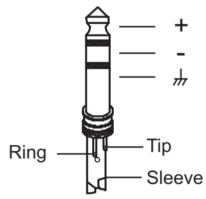
- Wiring Configuration

Either the 1/4" TRS phone jack or XLR connector can be wired in balanced and unbalanced modes, which will be determined by the actual application status, please wire your system as the following wiring examples:

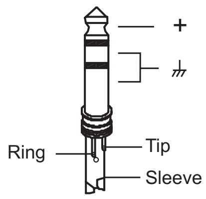
- For 1/4" Phone jack



TS Type Unbalanced

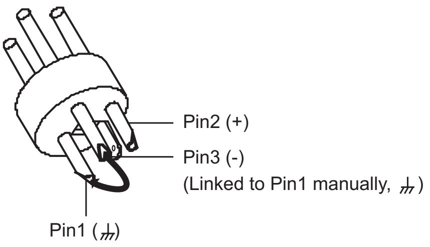


TRS Type Balanced

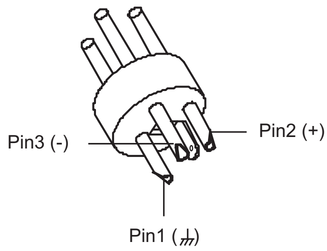


TRS Type Unbalanced

- For XLR connector



XLR Type Unbalanced

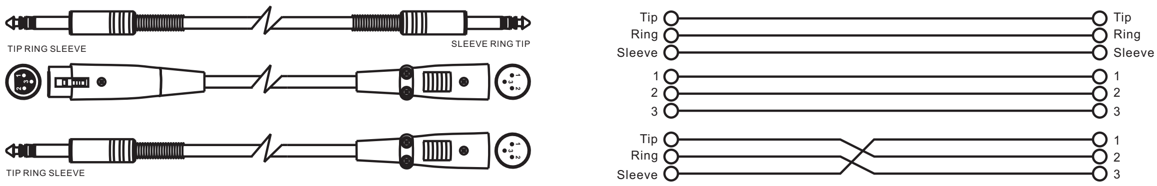


XLR Type Balanced

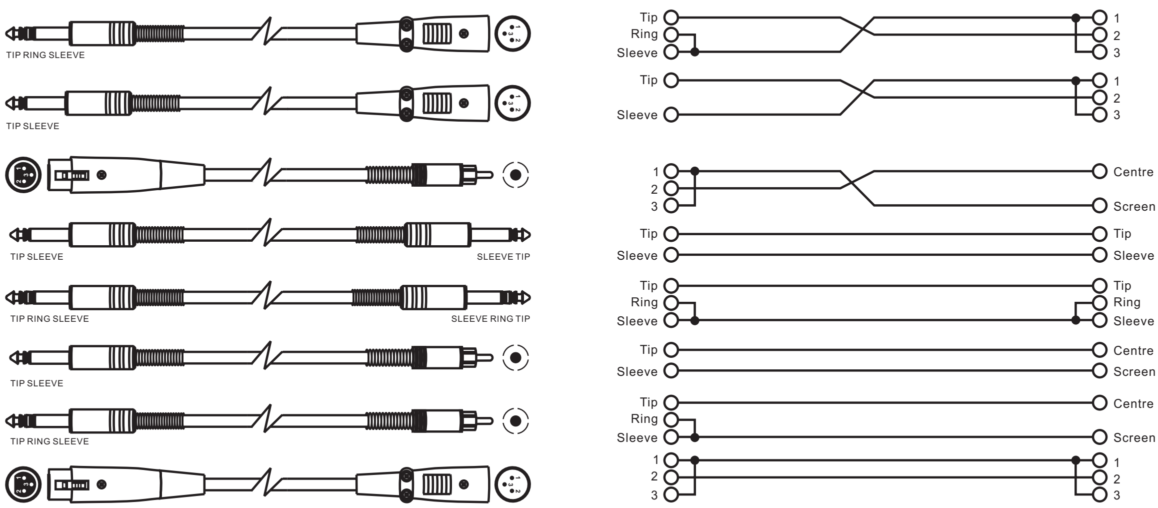
- In-line Connection

For these applications the unit provides 1/4" TRS and XLR connectors to easily interface with most professional audio devices. Follow the configuration examples below for your particular connection.

- Balanced



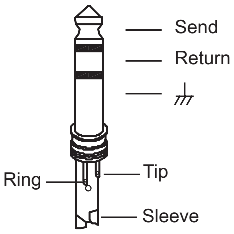
- Unbalanced



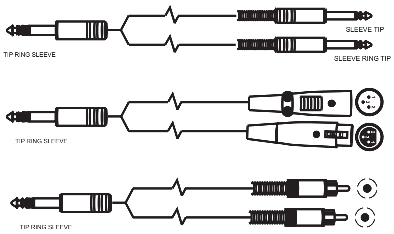
- Insert Points Connection

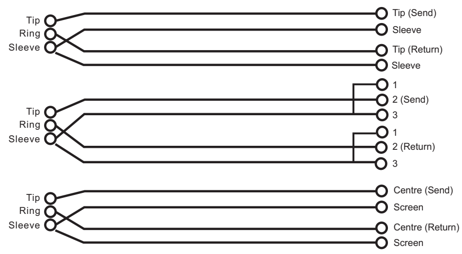
If you are connecting to a mixing console's main inserts, you may have a single TRS jack for Send and Return, in this case, use an insert "Y" cable that configured like the examples below.

- 1/4" TRS insert



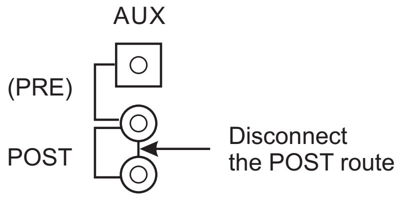
- Insert Leads



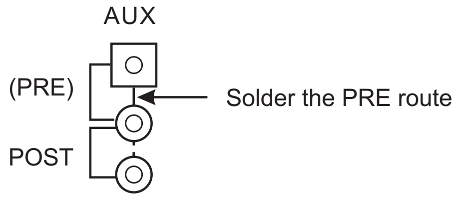


6. FOR THE EXPERTS WHO WANT TO KNOW MORE

As we have told you previously in this manual, the AUX SEND2 control both on mono and on stereo channels is factory wired as POST-FADER. If you have some skill in electronic components soldering you can modify this setting and have all your AUX SENDS configured as PRE-FADER.



Before



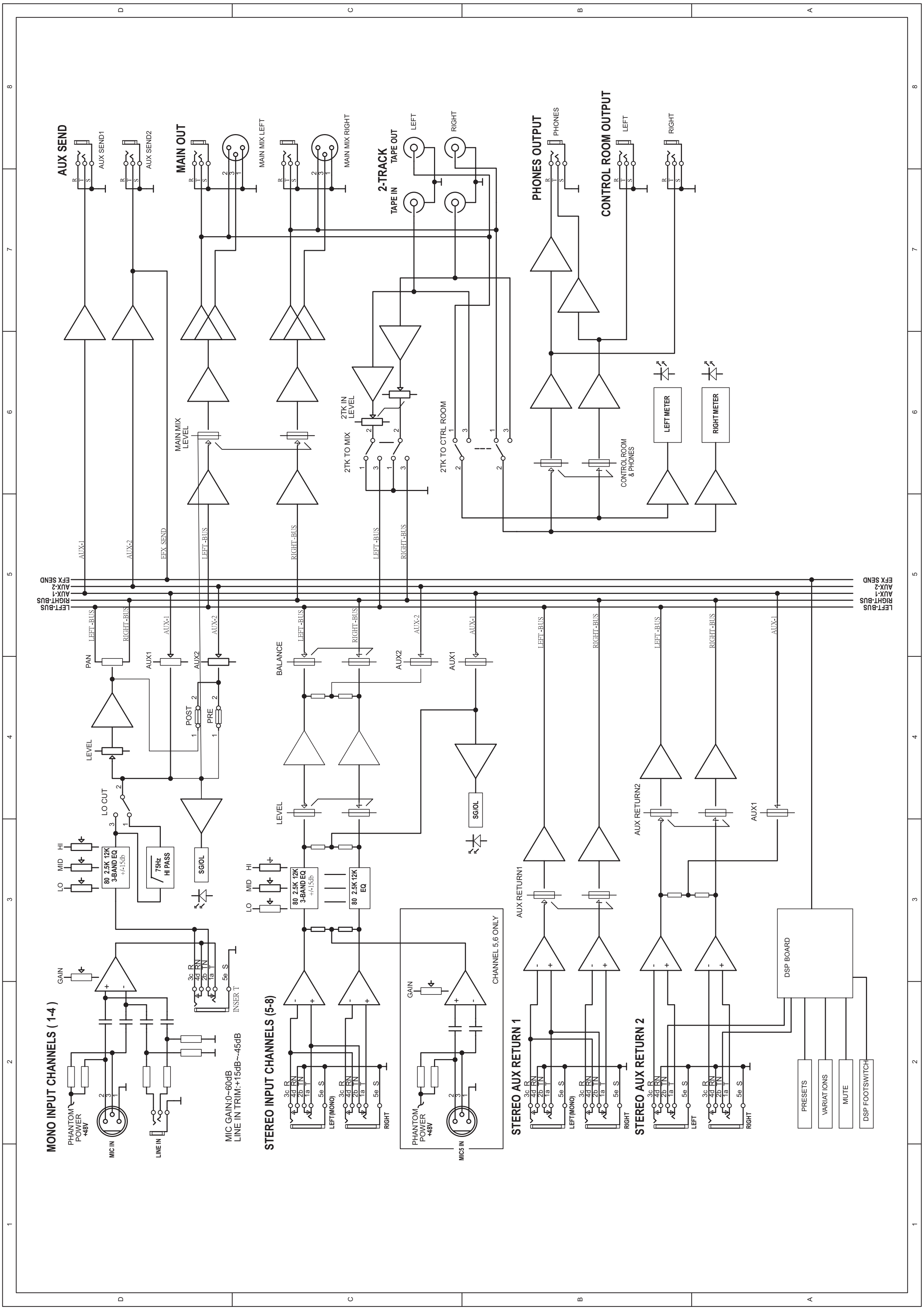
After

Modification on mono and stereo channels

7. PRESET LIST (For AMX-140FX Model)

No.	Preset	Description	Controllable parameter	
			Parameter	Variable range
1	VOCAL 1	Simulate a room with small delay time.	Decay time Pre-delay	0.8~1.1s 0~79ms
2	VOCAL 2	Simulate a small space with slight decay time.	Decay time Pre-delay	0.8~2.5s 0~79ms
3	LARGE HALL	Simulate a large acoustic space of the sound.	Decay time Pre-delay	3.6~5.4s 23~55ms
4	SMALL HALL	Simulate a small acoustic space of the sound.	Decay time Pre-delay	1.0~2.9s 20~45ms
5	LARGE ROOM	Simulate a studio room with many early reflections.	Decay time Pre-delay	2.9~4.5s 23~55ms
6	SMALL ROOM	Simulate a bright studio room.	Decay time Pre-delay	0.7~2.1s 20~45ms
7	PLATE	Simulate the transducers sound like classic bright vocal plate.	Decay time Pre-delay	0.6~6.1s 10ms
8	TAPE REVERB	Simulate a record head and multiple playback heads at intervals along the tape.	Decay time Pre-delay	1.3~5.4s 0~84ms
9	SPRING REVERB	Simulate the analog transducers' springs lightly stretched sound.	Decay time Pre-delay	1.3~5.4s 0~35ms
10	MONO DELAY	Reproduce the sound input on the outputafter a lapse of time.	Period	60~650ms
11	STEREO DELAY	Recreate the input sound on the stereo output with different time.	Period Feedback	210~400ms 37~73%
12	FLANGER	Simulate to play with another person carryingout sam e the notes on the same instrument	Rate	0.16~2.79Hz
13	CHORUS	Recreate the illusion of more than one instrument from a single instrument sound	Rate	0.5~5Hz
14	REV.+DELAY	Delay with room effect	Delay period Rev. decay time	211~375ms 1.0~2.9s
15	REV.+FLANGER	Stereo chorus and large room reverb	Flanger Rate Rev. decay time	0.16~2.52Hz 1.5~2.9s
16	REV.+CHORUS	Simulate the sound effect achieved by rotating horn speakers and a bass cylinder	Chorus rate Rev. decay time	0.5~4.74Hz 1.5~2.9s

8. BLOCK DIAGRAMS



9. TECHNICAL SPECIFICATION

Mono input channels		
	Microphone input	electronically balanced, discrete input configuration
	Frequency response	10Hz to 55kHz, +/– 3dB
	Distortion (THD & N)	0.005% at +4dBu, 1kHz
	Gain range	0dB to 44dB (MIC)
	SNR (Signal to Noise Ratio)	115dB
	Line input	electronically balanced
	Frequency response	10Hz to 55kHz, +/– 3dB
	Distortion (THD & N)	0.005% at +4dBu, 1kHz
	Sensitivity range	+15dBu to – 30dBu
Stereo input channels		
	Line input	Balanced
	Frequency response	10Hz to 55kHz, +/– 3dB
	Distortion (THD & N)	0.005% at +4dBu, 1kHz
Impedances		
	Microphone input	1.4kOhm
	Channel Insert return	2.5kOhm
	All other inputs	10kOhm or greater
	Tape out	1kOhm
	All other output	120Ohm
Equalization		
	Hi shelving	+/ – 15dB @12kHz
	Mid bell	+/ – 12dB @2.5kHz
	Low shelving	+/ – 15dB @80Hz
	Low Cut filter	75Hz, 18dB/oct.
DSP Section (For AMX-140FX Model)		
	A/D and D/A converters	24 bit
	DSP resolution	24 bit
	Type of effects	Hall, Room, Vocal & Plate REVERBS
		Mono & Stereo DELAY (max DELAY TIME 650ms)
		Chorus, Flanger & Reverb MODULATIONS
		REVERB+DELAY, REVERB+CHORUS,
		REVERB+FLANGER combinations
	Presets	256
	Controls	16-position PRESET Selector
		16-position VARIATION selector
		PEAK LED
		MUTE SWITCH with LED indicator
Main Mix Section		
	Noise (Bus noise)	Fader 0 dB, channels muted: – 100dBr (ref.:+4dBu)
		Fader 0dB, all input channels assigned and set to
		UNITY gain: – 90dBr (ref.:+4dBu)
	Max output	+22dBu balanced XLR,
		+22dBu unbalanced, 1/4" jacks
	AUX Returns gain range	-∞ to +20dB
	AUX Sends max out	+22dBu

Power supply (AC/AC Adaptor)		
	Main voltage	USA/Canada 100 – 120V~, 60Hz
		Europe 210 – 240V~, 50Hz
		U.K./Australia 240V~, 50Hz
	Power Consumption	17.1 watts
Physical		
	Dimension (W×D×H)	270mm×310mm×35/45mm
		(7.79"×8.95"×1.01"/1.30")
	Net weight	3.0Kg (6.61lb)
	Shipping weight	3.6Kg (7.94lb)

10. WARRANTY

1. WARRANTY REGISTRATION CARD

To obtain Warranty Service, the buyer should first fill out and return the enclosed Warranty Registration Card within 10 days of the Purchase Date.

All the information presented in this Warranty Registration Card gives the manufacturer a better understanding of the sales status, so as to purport a more effective and efficient after-sales warranty service.

Please fill out all the information carefully and genuinely, miswriting or absence of this card will void your warranty service.

2. RETURN NOTICE

2.1 In case of return for any warranty service, please make sure that the product is well packed in its original shipping carton, and it can protect your unit from any other extra damage.

2.2 Please provide a copy of your sales receipt or other proof of purchase with the returned machine, and give detail information about your return address and contact telephone number.

2.3 A brief description of the defect will be appreciated.

2.4 Please prepay all the costs involved in the return shipping, handling and insurance.

3. TERMS AND CONDITIONS

3.1 ▲LTO warrants that this product will be free from any defects in materials and/or workmanship for a period of 1 year from the purchase date if you have completed the Warranty Registration Card in time.

3.2 The warranty service is only available to the original consumer, who purchased this product directly from the retail dealer, and it can not be transferred.

3.3 During the warranty service, ▲LTO may repair or replace this product at its own option at no charge to you for parts or for labor in accordance with the right side of this limited warranty.

3.4 This warranty does not apply to the damages to this product that occurred as the following conditions:

- Instead of operating in accordance with the user's manual thoroughly, any abuse or misuse of this product.
- Normal tear and wear.
- The product has been altered or modified in any way.
- Damage which may have been caused either directly or indirectly by another product / force / etc.
- Abnormal service or repairing by anyone other than the qualified personnel or technician.

And in such cases, all the expenses will be charged to the buyer.

3.5 In no event shall ▲LTO be liable for any incidental or consequential damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion or limitation may not apply to you.

3.6 This warranty gives you the specific rights, and these rights are compatible with the state laws, you may also have other statutory rights that may vary from state to state.

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